Parkwood Avenue & The Plaza Corridor Study

FINDINGS REPORT

City of Charlotte
Department of Transportation
March 27, 2017

CHARLOTTE

CORRIDOR STUDIES

In 2016, the City of Charlotte began several multimodal planning studies to enhance pedestrian and bicycle travel on portions of arterials (thoroughfares) in Charlotte. The studies evaluate existing conditions, identify deficiencies, and make recommendations to improve the safety and ease of walking and biking along and across busy streets.

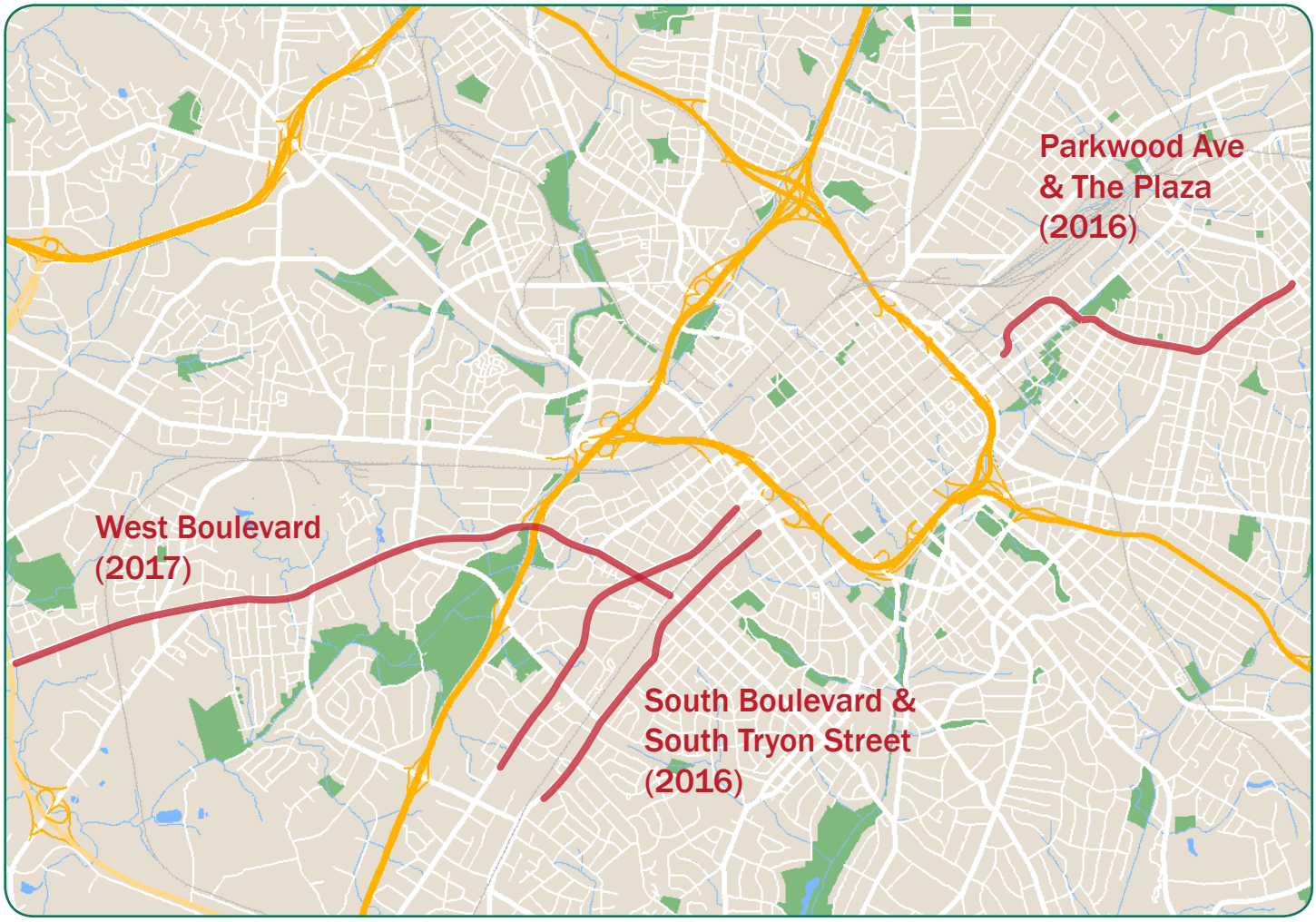
These corridors were identified by many criteria including: four or more lanes, a posted speed limit over 35mph, top 15 transit ridership routes, no planned street improvements by other projects in the Community Investment Plan (CIP), and limited pedestrian crossing opportunities.

The corridors currently being studied are:

- South Boulevard
- South Tryon Street
- West Boulevard
- Parkwood Ave & The Plaza

This report decribes why CDOT studied Parkwood Avenue and The Plaza as well as CDOT's findings from the study.

Map 1: Corridor Studies in Charlotte



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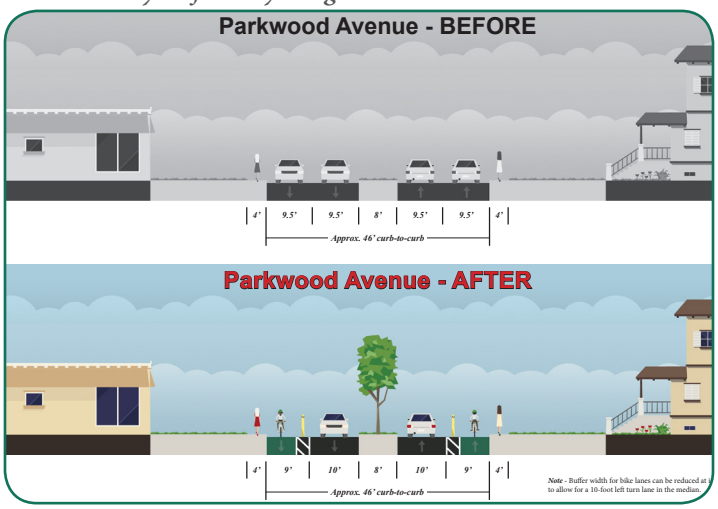
Parkwood Avenue & The Plaza

STUDY BACKGROUND

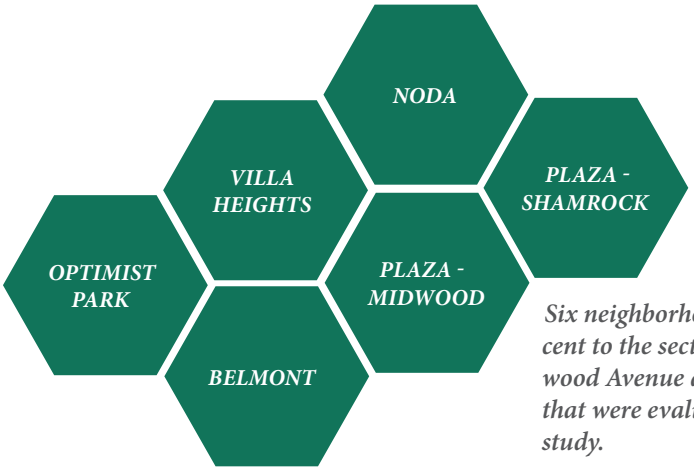
Residents' Request

In November 2015, residents from six neighborhoods asked City Council to improve conditions for bicyclists and pedestrians along Parkwood Avenue and The Plaza. **A petition was submitted to Council with over 500 signatures, asking the City to implement a road diet on the two streets between North Davidson Street and Matheson Avenue.**

The petition included a graphic that illustrates the type of pedestrian and bicycle-friendly design that residents want to see.



According to the petition, recent crashes involving pedestrians and cyclists along with development pressure influenced by City investments (like the LYNX Blue Line Extension) prompted the request. The petitioners expressed an interest in improving access to the LYNX Blue Line stations in the area and the Cross Charlotte Trail. Additionally, they declared the two streets as barriers between neighbhorhoods.



Six neighborhoods are adjacent to the sections of Parkwood Avenue and The Plaza that were evaluated in this study.

STUDY TIMELINE

2015

- **November** — 11/23 - Petition submitted to Council at Citizen's Forum
- Council refers topic to Transportation & Planning Committee

2016

- **January** — 1/4 - Transportation & Planning Committee requests study
- **Winter & Spring** — Data Collection; Walking Tours
- **Summer** — Data review and traffic analysis
- **October** — Public Workshops 10/4 and 10/5

2017

- **January** — TAP Committee Status Update
- **February** — TAP Committee Follow-up
- **March** — Present Findings Report

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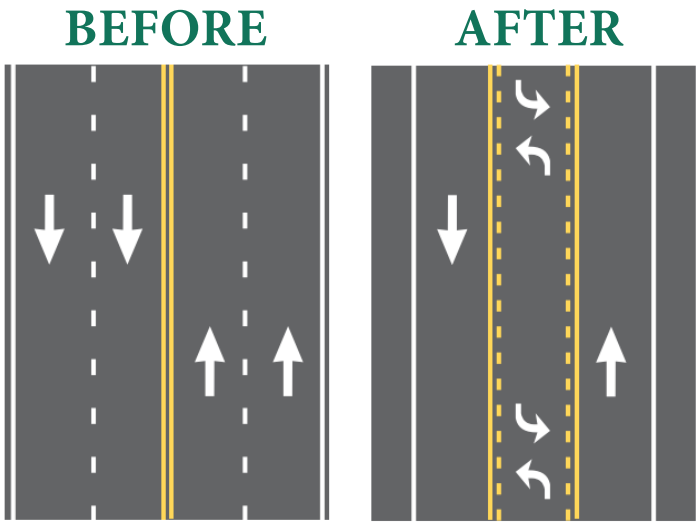
What is a road diet?

The petition requested that the City implement a "road diet" on Parkwood Avenue and The Plaza. According to the Federal Highway Administration (FHWA), a "road diet" is generally described as "removing travel lanes from a roadway and utilizing the space for other uses and travel modes." [1]



Example of a typical road diet design

Four-lane undivided streets have a history of relatively high crash rates and higher traffic speeds. When combined with back-of-curb sidewalks, these streets also create poor conditions for pedestrians and cyclists.

One option for addressing these concerns is a "road diet." A road diet involves converting an existing four-lane undivided roadway segment to a three-lane segment consisting of two through lanes and a center two-way left-turn lane. The reduction of lanes allows the roadway space to be reallocated for other uses such as bike lanes, pedestrian refuge islands, transit stops, or parking. [1]

Benefits of road diet installations typically include: [1]

- A reduction of both the number and severity of crashes
- Fewer lanes for pedestrians to cross
- An opportunity to install pedestrian refuge islands
- The opportunity to install bicycle lanes
- Traffic calming
- Encouraging a more community-focused, "Complete Streets" environment

Geometric and operational design features must be considered during the design of a road diet. Intersection turn lanes, traffic volume, signing, pavement markings, driveway density, transit routes and stops, and pedestrian and bicyclist facilities need to be carefully considered and appropriately applied during the reconfiguration for appropriate road diet implementation. [1] To date, the City of Charlotte has implemented about 20 road diets.

Parkwood Avenue & The Plaza

In response to the petition, Charlotte's City Council asked the Charlotte Department of Transportation (CDOT) to evaluate the road diet proposal. The corridor was expanded from the original request to include Parkwood Avenue and The Plaza between Belmont Avenue and Matheson Avenue as shown in the adjacent map.

Map 2: Parkwood Avenue & The Plaza Corridor Study Area

1. *Federal Highway Administration; Report No. FHWA-SA-14-028; Road Diet Informational Guide*

PUBLIC ENGAGEMENT

Walking Tours

In order to better understand the conditions residents face, CDOT hosted walking tours that were open to the public for Parkwood Avenue on May 11, 2016 and The Plaza on May 12, 2016.

During the walking tours, residents participated in a "walking audit," which is a tool used by planners and engineers to evaluate the walkability and bikeability of the existing built environment. The routes were designed to focus on a variety of conditions that pedestrians and cyclists face every day. These audits also provide residents an understanding of how planners and engineers evaluate roadway conditions for all users.

WALKING AUDIT SUMMARY

Parkwood	The Plaza	
74%	58%	Crossing the street is not comfortable for people of all ages and abilities
80%	61%	Not enough space between the sidewalk and traffic
70%	84%	Bicycling is not comfortable for people of all ages and abilities
73%	71%	Do not feel comfortable bicycling within the roadway

Key Concerns:

- Traffic speed
- Ability to cross the street (all modes)
- Lack of signals at Seigle Ave and Pegram Ave
- Condition of sidewalks (and aesthetics)
- Concern about ability to access greenway and light rail stations

Sidewalks on Parkwood Avenue and The Plaza are narrow and lack a planting strip, making it an uncomfortable walking experience.

Over 60 people attended the public walking tours in May 2016.

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Wrap-up Public Meetings

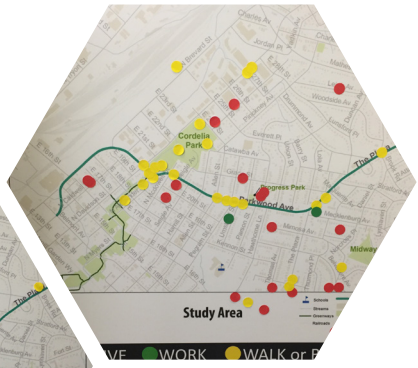
CDOT hosted a workshop on October 4, 2016, to receive feedback on the preliminary findings and recommendations for Parkwood Avenue and The Plaza.

Residents had the opportunity to review data gathered during the walking tour (shown on the previous page) and staff presented options for improving bicycle and pedestrian mobility along Parkwood Avenue and The Plaza.

Staff presented two potential ideas:

1. Implement a road diet on Parkwood between Belmont Avenue and The Plaza
2. Activate an unused alley to create an off-street pedestrian and bicycle path.

On October 5th, the results of the meeting on the previous day were tabulated and presented to residents. Residents that attended these meetings indicated that they preferred the road diet option.



"My vision for The Plaza is…

[a] safe travel to homes and businesses, for people of all ages and abilities!"

"My vision for Parkwood is…

[a] complete street serving all modes of transportation for connecting people to commercial, residential and parks."

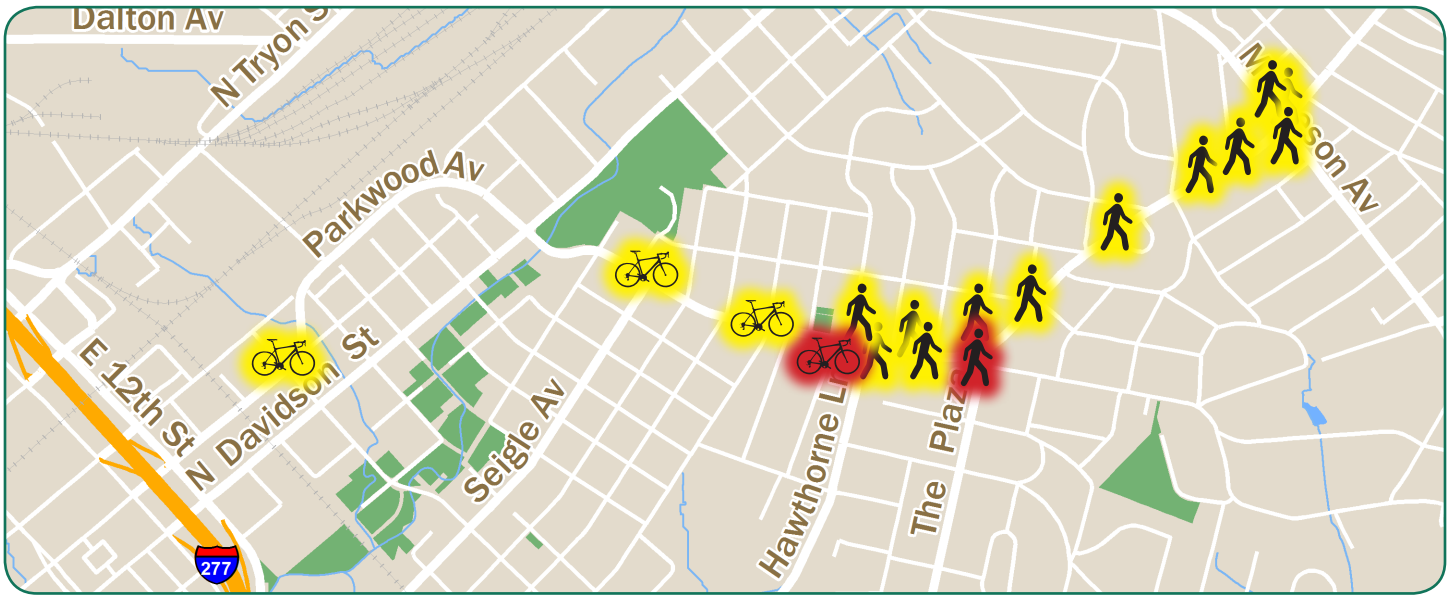
STUDY CONSIDERATIONS

Crash History

A review of crash data showed that between 2011 and 2015 there were 18 crashes involving bicyclists and pedestrians. Of those crashes, 14 involved pedestrians, with 13 of those resulted in injury and one resulted in a fatality. The pedestrian crashes primarily occurred on The Plaza and the section of Parkwood Avenue between Hawthorne Lane and The Plaza. The majority (10) of these crashes involved pedestrians crossing the street, and most of those (7) happened at signalized intersections. Motorists failing to yield the right-of-way and pedestrians crossing against the traffic light were cited as contributing factors in these crashes.

There were four bicycle crashes in the same five-year period. Three resulted in injury and there was one fatality. All of the crashes occurred on Parkwood Avenue between Belmont Avenue and Hawthorne Lane.

Map 3: Pedestrian & Bicycle Crashes 2011-2015



Many homes on Parkwood Avenue and The Plaza have small front setbacks which limit the City's options to improve this corridor.

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Nearby Projects Planned or Underway

Several transportation projects will affect the way people travel in and around the study area. Currently under construction is the CATS-funded LYNX Blue Line Extension and several companion projects funded by the City's Community Investment Plan (CIP). The projects listed below are also shown in ***Map 4***.

1 LYNX Blue Line Extension

The LYNX Blue Line will operate a station at the intersection of Parkwood Avenue and North Brevard Street. The access to the new rail transit service will be a key destination for residents in each of the neighborhoods along the corridor. The station does not include parking, so pedestrian and bicycle access considerations are key.

2 25th Street Bridge

In order to improve access for bicycles and pedestrians to the Blue Line stations, the City is evaluating a number of improvements. Of those improvements, the 25th Street bridge over Little Sugar Creek will provide Villa Heights and Optimist Park with direct access to the 25th Street Station.

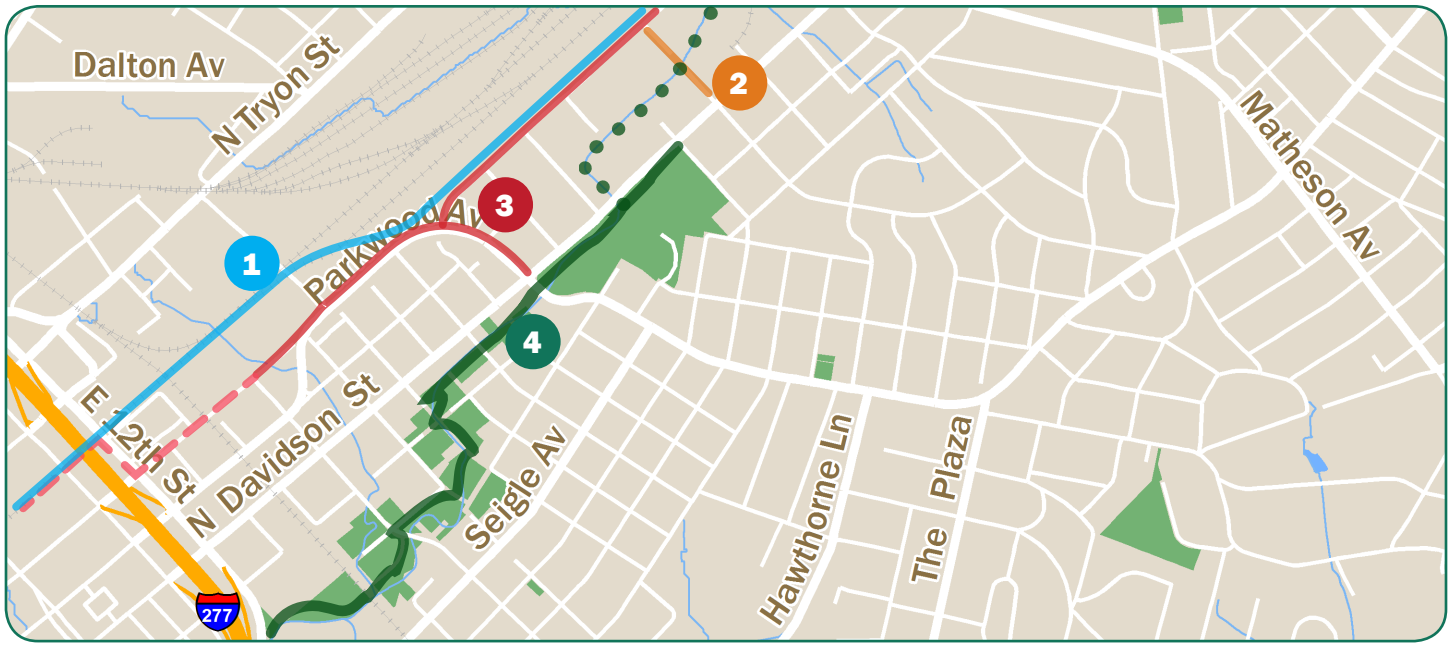
3 Parkwood Avenue & North Brevard Street Multi-use Path

With this project, the City will construct a 12 ft multi-use path on the north and northwest side of Parkwood Avenue between North Davidson Street and North Brevard Street.

4 Cross Charlotte Trail

The City of Charlotte is working with Mecklenburg County to construct a 26-mile pedestrian and bicycle trail that will stretch from Pineville to the Cabarrus County line. This trail crosses the corridor at Parkwood Avenue. The first trail extension project was recently completed in Cordelia Park. This trail will provide a new transportation option for the neighborhood through the study area.

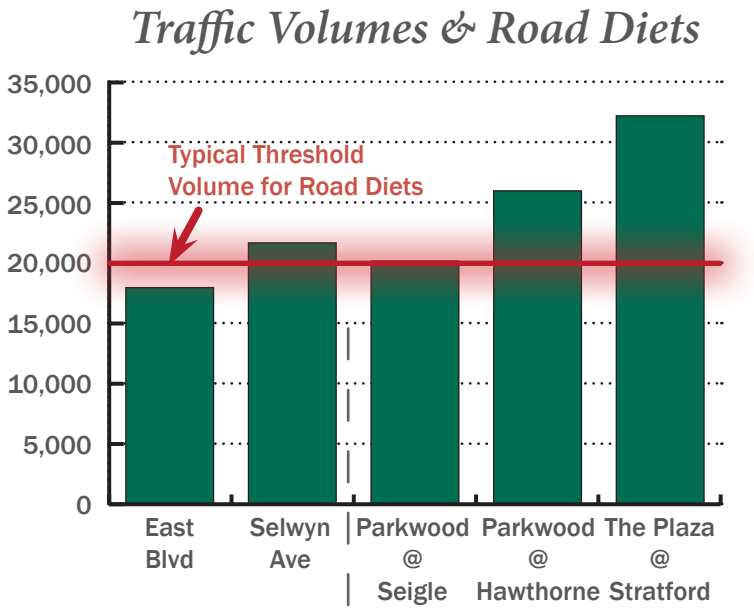
Map 4: Nearby Projects Planned or Underway



Current Traffic Volumes

Traffic volume is one of many factors used to evaluate the feasibility of a potential road diet. Typically, the threshold volume for road diets is 20,000 vehicles per day. Traffic volumes below this number are frequently considered good candidates for road diets. Volumes over this number must be carefully analyzed to determine feasibility. In many cases, it may not be advisable to implement a road diet due to impacts on traffic patterns.

Current traffic on Parkwood Avenue and The Plaza varies significantly from one end of the corridor to the other. For example, Parkwood Avenue @ Seigle Avenue carries 20,000 vehicles per day, but The Plaza @ Stratford Avenue carries over 30,000 vehicles per day.



Traffic Analysis

Because traffic volumes for Parkwood Avenue and The Plaza are at or above the typical threshold volumes for road diets, a detailed traffic analysis was conducted. The analysis considered a variety of road diet options, using both current year volumes and volumes anticipated in the future based on a 10% and 20% growth factor.

Current Roadway Design & Right-of-Way Constraints

Both Parkwood Avenue and The Plaza are constrained by their current right-of-way. At 60 feet, the available space is just barely wide enough for the existing street. The lack of space limits the potential solutions that can be used to improve pedestrian and bicycle safety without buying additional right-of-way.

Additionally, due to previous widening projects, the existing setbacks of the houses in the area are very small. In many locations, houses are located only a few feet from the sidewalk.

Because the current sidewalk is located at the back of curb and lacks a planting strip, pedestrians walking along the street are forced to walk adjacent to traffic, which makes walking uncomfortable and percieved unsafe. Additionally, due to the limited width, it can be challenging for two pedestrians to walk side-by-side or pass each other on the sidewalk.

Parkwood Avenue

Right-of-Way	*60ft*
Median	*6ft*
Planting Strip	*none*
Sidewalk	*4ft*

The Plaza

Right-of-Way	*60ft*
Median	*none*
Planting Strip	*0 - 3ft*
Sidewalk	*4 - 5ft*

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STUDY FINDINGS

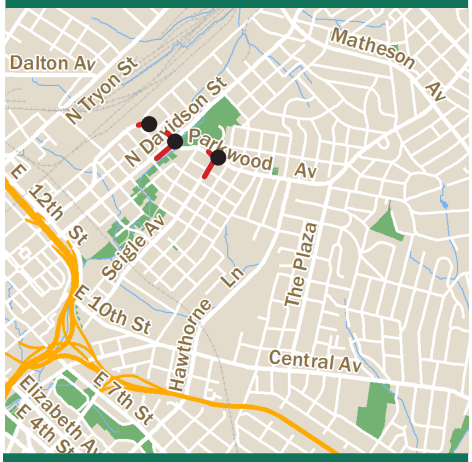
Implementing a road diet would have varying impacts on all travel along Parkwood Avenue and The Plaza. Notably, conditions for bicyclists would improve due to the presence of buffered/protected bicycle lanes. The bicycle lanes, in turn, would provide additional buffer space for pedestrians walking on the sidewalk. CDOT's traffic analysis indicates that a road diet of Parkwood Avenue is feasible with existing traffic volumes, with only marginal increases in congestion expected. This is not the case with a road diet for The Plaza. Traffic volumes are too high to reduce travel lanes without resulting in extreme congestion and gridlock. With these conditions, some traffic will divert to other nearby streets.

What are the impacts of a road diet on Parkwood Avenue and The Plaza?

	Parkwood Avenue	The Plaza
Moderates Vehicular traffic speed	*Yes*	*Yes*
Improves pedestrian separation from traffic	*Yes*	*Yes*
Improves bicycle facilities	*Yes*	*Yes*
Improves pedestrian and bicycle crossing opportunities	*Yes*	*Yes*
Improves access to Blue Line Extension stations	*Yes*	*Yes*
Improves access to the Cross Charlotte Trail	*Yes*	*Yes*
Accommodates current (2016) vehicular traffic	*Yes*	***No***
Accommodates 10% vehicular traffic growth	*Yes*	***No***
Accommodates 20% vehicular traffic growth	***Noticeable congestion***	***No***

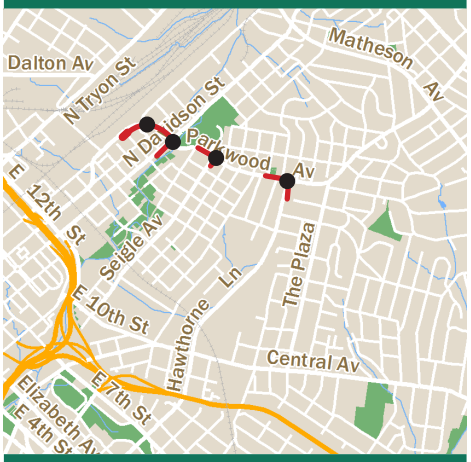
The series of maps below illustrate the impact to vehicular traffic patterns when implementing road diet scenarios on Parkwood Avenue and The Plaza. Each map illustrates outbound traffic queues using 2016 traffic data during the PM peak under various scenarios.

Map 4: Traffic queues with current road design



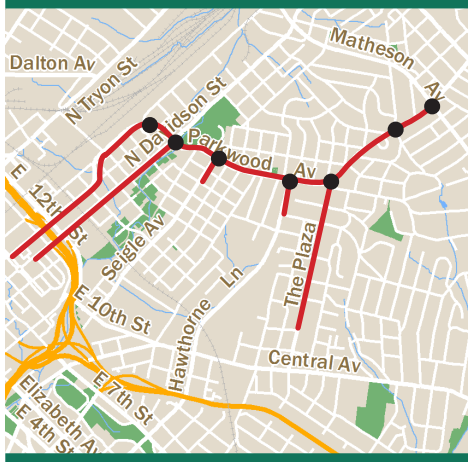
+/- 6 min average travel time from E 12th St to Matheson Ave

Map 5: Traffic queues with Parkwood Road Diet



+/-7 min average travel time from E 12th St to Matheson Ave

Map 6: Traffic queues with Parkwood & The Plaza Road Diet



Gridlock conditions from E 12th St to Matheson Ave

STUDY RECOMMENDATIONS

The "toolbox" below outlines specific improvements to be implemented over time along Parkwood Avenue and The Plaza. The estimated cost of the improvements (#1-17) is +/- $2.5 million. These improvements are shown on **Map 5** on the following page.

	Improvement	Applicable Location(s)	Time to Implement	Description
STREET CROSSING IMPROVEMENTS	Signal Modifications	1 Parkwood & N. Davidson St 2 Parkwood & Hawthorne Ln 3 Parkwood & The Plaza 4 The Plaza & Clemson Ave 5 The Plaza & Matheson Ave	<1 year	Modify existing traffic signals to include "Leading Pedestrian Intervals" (LPI) to improve pedestrian safety at intersections. This treatment activates the pedestrian crossing signal in advance of the green light for cars, giving pedestrians extra time to cross the intersection.
	Pedestrian Hybrid Beacon	6 The Plaza near Stratford Ave	1-3 years	Pedestrian activated signal that stops traffic to allow pedestrians to cross the street.
	New Traffic Signals	7 Parkwood & Belmont Ave 8 Parkwood & E. 16th St 9 Parkwood & N. Brevard St 10 Parkwood & Seigle Ave	1-3 years 1-3 years < 1 year 1-3 years	New traffic signals will provide additional opportunities for people to safely cross the street
ROAD DIET IMPLEMENTATION	Remove Travel Lanes	11 11 Parkwood Ave	1-3 years	Remove one travel lane in each direction
	Protected Bicycle Lane	12 Parkwood Ave (Belmont to Hawthorne)	1-3 years	5 ft bicycle lane with 3 ft buffer
	Bicycle Lane	13 Parkwood Ave (Hawthorne to The Plaza)	1-3 years	5 ft bicycle lane
PEDESTRIAN & BICYCLE NETWORK IMPROVEMENTS	Sidewalk Maintenance	14 Parkwood Ave 15 The Plaza	< 1 year	Make repairs as needed to existing sidewalk infrastructure
	Sidewalk Accessibility Upgrades	16 16 16 Parkwood Ave 17 17 17 The Plaza	1-3 years	Review sidewalk conditions and make accessibility improvements as required by the Americans with Disabilities Act (ADA).
	Network Improvements	18 18 18 All streets in close proximity to Parkwood Ave and The Plaza	Ongoing	Seek opportunities to improve connections and enhance the surrounding street network
	Development	All streets	Ongoing with development	Seek opportunities to rebuild the sidewalk and create new connections through land development

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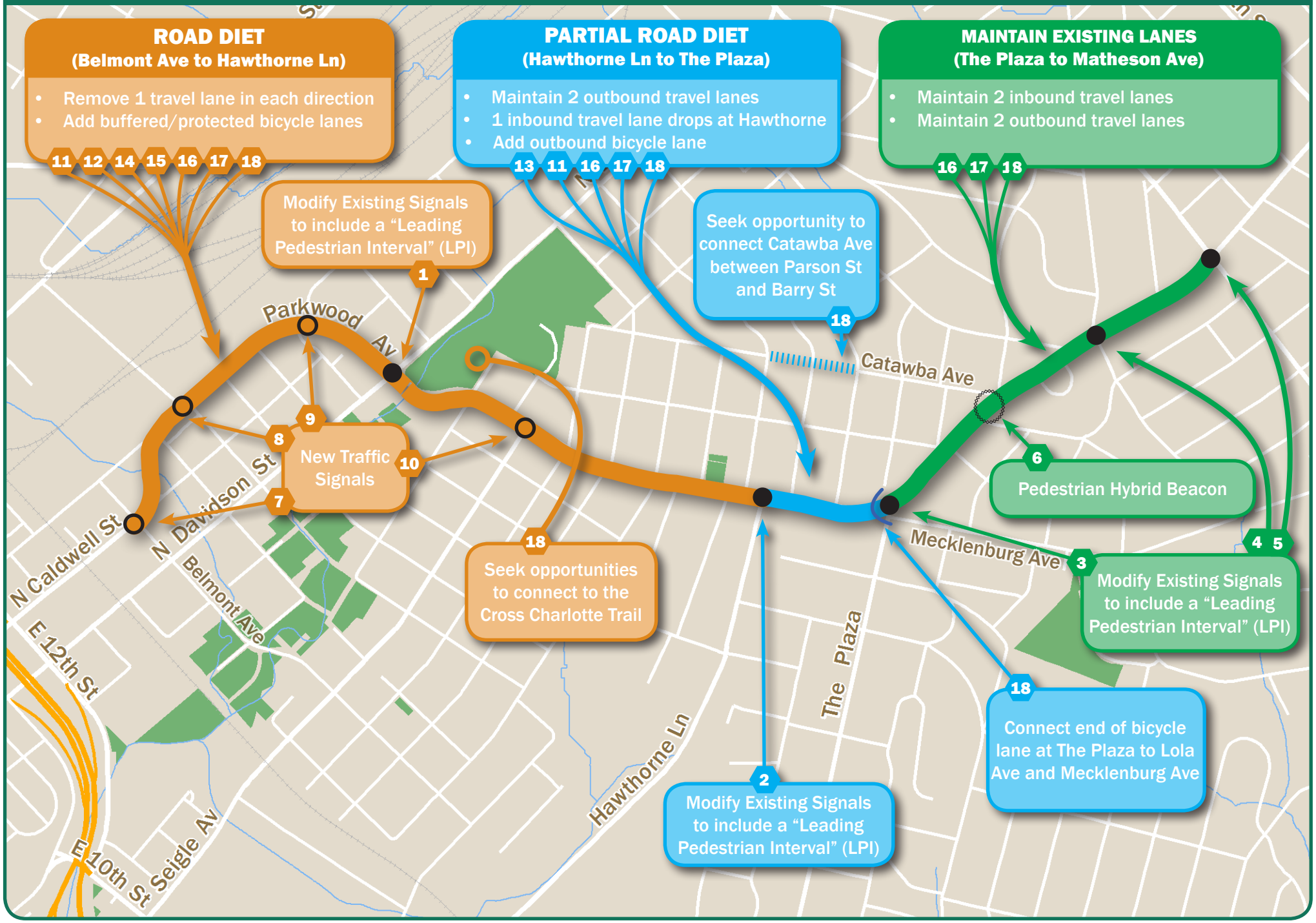
MAP 5: STUDY RECOMMENDATIONS